

The Béesh ligaii Bighan

(Silver Structure) (Feature 9)

At Site AZ-I-9-7, 2.27 miles W-NW of junction
of New Mexico State Highway 506

and Indian Highway 63

Teec Nos Pos vicinity

Apache County

Arizona

HAER No. AZ-32

HAER

ARIZ,

1-TENPO.V,

1-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record

Western Regional Office

National Park Service

U.S. Department of the Interior

San Francisco, California 94102

HISTORIC AMERICAN ENGINEERING RECORD

HAER
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The Béésh ligaii Bighan
(Silver Structure) (Feature 9)

HAER No. AZ-32

Location: At Site AZ-I-97, approximately 2.27 miles west-northwest of the junction of New Mexico State Highway 506 and Indian Highway 63; approximately 1.23 miles northwest of Red Goat Spring; and approximately 2 miles west of the town of Beclabito, New Mexico, Teec Nos Pos vicinity, Apache County, Arizona

UTM: Zone 12; 672820 mE, 4078100 mN

Quad: Beclabito, New Mexico-Arizona, Provisional edition 1982, 7.5' series

Significance: The *Béésh ligaii Bighan* derives its significance from the fact that it is a component of the only known base metals mine in the Carrizo Mountains. As such, it is unique. The mine and its features represent the result of intensive prospecting for gold and other precious metals that began on the Navajo Reservation, perhaps as early as 1875. Moreover, the mine, in operation during the 1920s, ranks among the oldest of any type of mine in the eastern Carrizos.

The *Béésh ligaii Bighan* is part of Site AZ-I-9-7, an abandoned mine situated on the eastern slopes of the Carrizo Mountains, near the northern end of the mountain range (Figure 1). Features associated with the mine are strung out across the mountain slope for a distance of approximately 1,050 feet. The westernmost portion of the site is at the highest elevation (6,160 feet above MSL). From this point, terrain slopes steeply down (21 degrees) to the east. The elevation at the eastern end of the site is 6,020 feet above MSL. On-site vegetation includes an overstory of pinyon and juniper. Sagebrush, mountain mahogany, Mormon tea, and muhly grass comprise the understory. Topographically, the site is situated within a small canyon and along the ridges, benches, and slopes that border the canyon. The canyon itself is unnamed, but is an intermittently flowing tributary of Beclabito Wash, which is located approximately 6,000 feet to the northeast. Although the Carrizos contain numerous seeps and springs, there are no named permanent water sources in close proximity to the site. Red Goat Spring, which may represent a permanent water source, is located approximately 1.23 miles to the southeast.

THE *BÉÉSH LIGAI BIGHAN* ("Silver Structure", Feature 9, Site AZ-I-9-7)
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Site AZ-I-9-7 itself consists of 15 features, including both architectural and nonarchitectural remains. The *Béésh ligai Bighan* is one of two structural features on the site (Figure 2). The *Béésh ligai Bighan* is situated on the south-central portion of the site. It represents the only known mine building on the site and consists of two rooms. The smaller room appears to have been a hoist room, while the larger is interpreted as a storage room, although it may have served multiple functions. The *Béésh ligai Bighan* (Figure 3) is located adjacent to one of the two vertical shafts on the mine which access underground workings. This shaft is designated Feature 7. The second shaft (Feature 13) is located near the western end of the site. There are no extramural features, such as ash or trash dumps, associated with the *Béésh ligai Bighan*. The second structure (Feature 1) is the remains of a house that may have contained as many as four rooms. This structure is the easternmost feature on the site, situated on the south side of a dirt road, approximately 575 feet from the *Béésh ligai Bighan*. Three features, including a coal pile (Feature 2), a charcoal and ash pile (Feature 3), and a charcoal stain (Feature 4) are located within 85 feet of the structure identified as Feature 1 and these may all represent the remains of domestic activities associated with the house. The remaining features on the site are all associated with mining activities. These include 3 piles of waste material (Features 5, 6, and 10), 2 retaining walls (Features 8 and 12), 1 dam (Feature 14), 1 possible culvert (Feature 15), and 1 trail (Feature 11). Anderson and Martin (1991) provide detailed descriptions of each of these features.

The *Béésh ligai Bighan* has no known name in the available literature. Prior to the Navajo Nation Archaeology Department's (NNAD) documentation of the structure in conjunction with the recordation of Site AZ-I-9-7, the only mention of the building is in a report by Chenoweth (1989), who visited the site in 1985. He refers to the structure only as "the ruins of some old mine buildings" (Chenoweth 1989:3) and shows them on a sketch map as "houses" (Figure 4). *Béésh ligai Bighan* is Navajo in origin. *Béésh ligai* can be translated as "metal" or "silver", while *Bighan* can be translated as "building", "structure", or "shed". The name was chosen during HAER form preparation based on information provided by Mr. Perry Charley of the Navajo Abandoned Mine Lands Reclamation Department (NAMLRL), who is also a life-long resident of the Beclabito area. Mr. Charley's inquiries revealed that while neither the mine nor any of its components were known locally by specific names, most residents of the area who knew the site believed it had been a silver mine.

PHYSICAL DESCRIPTION OF THE *BÉÉSH LIGAI BIGHAN*

The *Béésh ligai Bighan* consists of two stone masonry rooms that are attached at one corner (see Photographs 1, 2, and 3). The larger of the rooms is believed to have been a storage room. The smaller room has walls that are heavily buttressed and probably functioned to support and protect the mine hoist.

The emplacement of the structure in a narrow V-shaped arroyo forced the builders to dig the structure into the hillside, thereby providing space for mining activities in the vicinity of the vertical shaft. Thus, the stone block walls on three sides of the structure serve the dual purpose of stabilizing or retaining the talus slope to provide structural integrity.

Original plan drawings of the *Béésh ligai Bighan* cannot be located and it is quite likely that none ever existed. This kind of vernacular architecture was likely designed and modified on-site to meet needs specific to the hoist used to access the mine. Buttressing of the hoist room walls is oriented to supporting an overhead framework in the vicinity of the vertical shaft.

The *Béésh ligai Bighan* is in a partially collapsed state. The roof, door, and interior finishing materials (if any) have been removed. Mr. Perry Charley, whose family has grazing rights for land adjacent to the site, indicated that in his 40 years in the area, he never saw any roof material or doors on the site. In its current state, only major structural modifications would be noticeable to the site recorders. No such modifications are apparent; however, observations of corner bonding and abutting indicate that the hoist room was constructed before the storage room. The time between construction episodes is probably very short, however, because the style of dry-laid masonry is similar in both rooms and the mine is known to have been in operation for only a few years.

Storage Room (Room 1)

In plan view the storage room has the shape of an irregular polygon with four sides. Estimating from this irregular shape, the interior of the room measures 16 feet 5 inches by 18 feet 5 inches in size, thus providing approximately 302 square feet of floor space. Currently the walls range from 7 feet to nearly 9 feet in height, however, these measurements were made from a floor surface that is filled with dirt and rock debris. Also, it is likely that the top portions of the walls do not represent the full height because of the process of ruination. Consequently, the full height of the walls was likely 10 feet or greater.

The doorway to the storage room is located in the north wall (see Photograph 4). It measures approximately 5 feet in width. There is no evidence of a door jamb, sill, or hanging hardware. In its current state of ruin there is no evidence of interior features within the room.

The east, south, and west walls of the storage room are dug into the hillside and cut into solid rock. Dry-laid stone masonry was used to bring the walls to full height and stabilize talus slope materials. The masonry is roughly coursed, two wythes

thick in most places, and chinked with small pieces of stone. Larger pieces of stone blocks characterize the footing, but smaller blocks are incorporated in courses above 5 feet. The uppermost courses of stone incorporate slabs rather than blocks. There is no evidence of the roof or how it may have been tied to the walls.

The north wall of the storage room is somewhat different because it contains the doorway and is constructed entirely of dry-laid rock masonry. As with the other walls, double-wythe masonry is present, however, the outside wythe is composed of significantly larger blocks than the interior facing. The method of construction effectively presents a smoother surface on the interior of the structure and suggests that the exterior wythe was the load-bearing member.

Each corner of the storage room is constructed in a slightly different fashion. Only the southeast corner is tied by interlocking stones, set every third or fourth course. The northeast corner is formed by the north wall abutting the east wall. The lack of tie stones in this corner is demonstrated by a large crack visible in the front of the structure (see Photograph 4). The southwest corner is formed by the south wall abutted against the west wall. More complicated corner bonding is evident in the northwest corner, because this is where the storage room is attached to the hoist room. At the northwest corner, the west wall abuts the north wall and end stub of the north wall of the hoist room. The north wall abuts the northeast wall of the hoist room. This pattern of abutment indicates that the hoist room (or at least its northeast wall) was constructed prior to the storage room.

Hoist Room (Room 2)

In plan view the hoist room is rectangular in shape with its long axis oriented northwest to southeast. The interior of the room measures 13 feet by 10 feet, providing approximately 130 square feet of floor space. The walls range to approximately 8 feet in height, however, like the storage room, the original hoist room walls were likely 10 feet or more in height.

The doorway to the hoist room is in the northwest wall (see Photograph 5). It may be described as a 3-foot-wide opening between the ends of the northwest and northeast walls. There is no evidence of the door jamb or hanging hardware.

One interior feature is evident in the room. It is a post that measures 13 inches in diameter. The post is located in the approximate center of the room. This post, along with two features in the walls, probably combined to support the hoist and associated machinery. The other features consist of interior buttressing of the west corner of the room and a beam socket set high in the east corner of the structure. The buttressing is composed of stone masonry set in the interior of the corner. The

beam socket consists of an opening in the masonry, high in the east corner of the structure. A small wooden plank or split log supports the rear of the beam socket. The orientation of these three features, aligned with the vertical mine shaft, indicates that this three-point arrangement supported the overhead framework for the hoist.

The walls of the hoist room are constructed from large stone blocks, set two wythes thick. All masonry appears to be dry laid, with stone chinking used to level and/or wedge the blocks in position. The northeast, northwest, and southwest walls are composed of free-standing masonry, but most of the southeast wall is cut from solid rock. Stone masonry is used on the upper portion of the southeast wall to stabilize the talus slope. High in the southeast wall is a single roof beam set in the two uppermost courses of masonry (see Photograph 6). The beam appears to be a pine log that measures approximately 4.5 inches in diameter. The only other interior wall features are two boards wedged into the northeast wall. These boards are inserted perpendicular to the wall, extending no more than 6 inches into the room. Although these pieces are not at the same elevation, they may be the remains of shelves or may have provided attachment for some other interior feature.

The construction of the hoist room shows greater use of ties to strengthen corner bonding than does that of the storage room. All corners except the north corner, which is the doorway, have occasional interlocked courses that serve to tie the walls together. The south corner is interesting because it is abutted and keyed into undulations in the bedrock surface which provide a stable wall tie. The most interesting corner construction in this room is the interior buttressing of the east corner. The buttress is constructed of dry-laid masonry that is closely fitted to the corner of the room. It does not appear to be tied to the corner because, over time, the buttress has separated slightly from the walls. As mentioned previously, this buttressed corner seems to have played a part in a three-point support system for the overhead hoist.

The general condition of the *Béesh ligai Bighan* may be characterized as a state of ruin. The roofs and nearly all interior features and detail have been removed, salvaged, or deteriorated. The remains of the superstructure consist of dry-laid masonry walls that are unstable, judging from the rubble noted in the interior of the rooms. Continued exposure to the elements will ultimately cause the structure to collapse.

HYPOTHESIZED FUNCTION OF THE *BÉÉSH LIGAI BIGHAN*

As indicated in the preceding section, the two rooms of the *Béesh ligai Bighan* are hypothesized to have functioned differently. The interpretations are, of necessity, based solely on observable details and context of the structure since neither archival

nor ethnographic information regarding its function are available.

It has been suggested that Room 1 functioned primarily, although perhaps not exclusively, as a storage area. There are several architectural details on which this interpretation is based. The first is the height of the walls, which are estimated to have reached or exceeded 10 feet. This height is much greater than is usually found in domiciliary structures, and it is unlikely that time or labor would be invested in constructing a building with a higher roof than needed. The second is the doorway in Room 1. Its 5-foot-width is greater than required for a house, but not inconsistent with requirements for moving equipment and supplies into and out of a building. The third is the absence of windows, which are generally found in Anglo houses and are evident in Feature 1. These facts, taken together with the presence of a house suitable for dwelling on the site, combine to result in the proposed storage function. It is acknowledged, however, that the room may have served more than one purpose during the course of its use life.

Room 2 is suggested to be a hoist room. The evidence for this interpretation is more clear. First, the vertical shaft that is adjacent to the room is known to be at least 60 feet in depth (Chenoweth 1989:3). Removal of rock and ore would have required a hoist to bring buckets from the underground workings. Moreover, the buttressed walls of the room and three-point support system discussed in detail above, support the notion of the hoist room, even in the absence of any remaining machinery.

In sum, the *Béésh ligai Bighan* appears to have been an intimate part of the mining operation at Site AZ-I-9-7.

History:

HISTORICAL CONTEXT--EARLY MINING ON THE NAVAJO RESERVATION

The history of prospecting in the Carrizos predates the history of Site AZ-I-9-7. However, a short review of 19th and early 20th century developments on the northern Navajo Reservation, as they relate both directly and somewhat more peripherally to mining, provides a context within which to view Site AZ-I-9-7. Kelley (1982:131) cites several researchers in summarizing the situation on the northern reservation during the late 1870s and early 1880s, and much of the following paragraph is abstracted from her work.

The land in the eastern Carrizos on which Site AZ-I-9-7 was eventually established was included in the boundaries of the Navajo Reservation created following the signing of the 1868 treaty between the Navajos and the United States. Seven years later, in 1875, the area's reservation status was threatened when the then Navajo Agent, a man named Army, attempted to open the Carrizos for mining of the gold that they supposedly contained. Possibly the prospectors who wanted access to the Carrizos were moving from the ore-rich San Juan Mountains north of the river,

where intensive prospecting had begun in the 1860s. Army tried to trade the northern third of the treaty reservation for land south of the reservation around Fort Wingate. Army's political opponents exposed the speculative element of this scheme, however, and the exchange never materialized (Brugge 1980:65). Prospecting in the Carrizos, nevertheless, continued. In the 1880s, a Navajo murdered a white prospector named Swift, although the man who was tried, convicted, and imprisoned may not have been the killer (Van Valkenburgh 1941:27; Forrest 1970:55).

The period between 1890 and 1910 saw additional prospecting the Carrizos. Chenoweth (1989) presents a historical summary of this period that is taken from Gregory (1917:140) and the following is quoted directly from Chenoweth's report:

In 1891 two groups of prospectors, at the request of the Navajos, were removed by the Sixth Cavalry for prospecting in the Carrizo's without permission. The ejected men filed a protest stating that "very valuable deposits of gold and silver had been located".

The Secretary of the Interior appointed a commission to look into these claims. This commission, chaired by General A. McD. McCook, U.S. Army, visited the Carrizo's in May 1892. General McCook was accompanied by J. C. Allyn, two geologists, and three professional prospectors. During two weeks in the mountains they found small amounts of copper and iron pyrite, but no gold, silver or lead deposits. Eighteen of the most promising samples were assayed; three samples averaged 2.95 ounces of silver and 0.015 and 0.025 ounces of gold per ton. The commission of Indian Affairs then issued a report stating "that the region was barren of metallic wealth and worthless for mining purposes".

In 1901 a party led by Tom Leaden entered the Carrizo's and at the most promising locality, sank a shaft to the depth of 15 feet. All that was encountered was some copper stains on joints near the surface. The following year the shaft was deepened to a depth of 47 feet, and the entire Carrizo's were prospected, but no mineral deposits were located. Additional prospecting in 1907 failed to locate anything of value.

Chenoweth (1989:1)

Whether or not the period from 1908 till 1919 represents a hiatus in prospecting activities in the Carrizos is unclear. None of the available sources document exploration or development during this period. The fact that prospecting and mining occurred both in the years preceding and succeeding this period suggests that most likely such activities did occur.

Early prospecting for gold and other precious metals in the Carrizos in the period between approximately 1880 and 1920 occurred at the same time that a number of Navajo leaders on the northern reservation were openly resisting government policies. A headman named Black Horse was one of the major proponents of Navajo autonomy. Kelley (1982:131-134) details internal reservation socio-political developments during this period and discusses several clashes between Navajos and

government troops that resulted in deaths on both sides and numerous arrests of Navajos. Sporadic incidents continued until Black Horse's death in 1920. It is not unlikely that the late 1800s murder of the Anglo prospector and the removal of other prospectors by the Sixth Cavalry mentioned above, were related to Navajo resistance to incursions into the Carrizo Mountains.

By 1920, the Navajo advocates of political-economic autonomy on the northern reservation had disappeared (Kelley 1982:134). At about the same time mining and energy exploration and development increased on the northern reservation. The first vanadium mines in the eastern Carrizos date to 1918 (Perry Charley [NAMLRL], personal communication 1992), and in 1921 oil was found on the reservation near Shiprock. It is against this backdrop and within this context that Site AZ-1-9-7 was eventually established.

HISTORY OF SITE AZ-1-9-7

The earliest published information dealing specifically with Site AZ-1-9-7 is found in Chenoweth (1989). Reviewing Bureau of Indian Affairs (BIA) records and working from old maps and documentation indicating ore shipments, Chenoweth concluded that the ore must have come from the mine at the location of AZ-1-9-7, since it contained the only known workings that match map locational information (Chenoweth 1989:1). Thus, it is through Chenoweth's research that the mine at AZ-1-9-7 is linked to the Navajo Mining Company and specific dates of operation in the 1920s are obtained.

Chenoweth (1989:Appendix) presents copies of BIA correspondence and documents dealing with the mining claim and lease and from these can be extracted the chain of events that appear to have led to the establishment of the mine. On June 11, 1919 the Commissioner of Indian Affairs in Washington, D.C., granted permission to J. W. Kelly and Nephi Johnson, Jr. of Marysville, Utah, to negotiate a mining lease on the Navajo Reservation. Sometime between June 11, 1919 and August 1919 Nephi Johnson, Jr. and a man named E. L. Jensen (who represented himself as J. W. Kelley) arrived at Shiprock, New Mexico. These men came to the reservation with the intent of prospecting under the permit. Permission to prospect was denied by the Superintendent (Evans W. Eastop?) of the San Juan Agency of the Navajo Reservation. It appears that permission to negotiate a lease did not authorize in-field prospecting activity. Nonetheless, Johnson and Jensen apparently entered the mountains and set up monuments in August, 1919. On November 1, 1919, Notices of Location were filed for four claims. These include the Navajo Mining Claim, Navajo Mining Claim No. 1, Navajo Mining Claim No. 2, and Navajo Mining Claim No. 4. All these claims were signed by Nephi Johnson, Wallace Johnson, and J. W. Kelley. In addition, the names Jacob W. Young, E. L. Jensen, N. M.(?) Johnson,

and Joseph Edmonds are found as signatories on one or more of the claims.

By July 5, 1920, the Navajo Mining Company, listed as successor in interest to Jacob W. Young, Wallace Johnson, J. W. Kelley, N. M. Johnson, E. L. Jensen, Nephi Johnson, and Joseph E. Edmonds, had been organized as a corporation and had applied for a lease to mine the Navajo, Navajo No. 1, Navajo No. 2, and Navajo No. 4 claims. The application was made by Kelley, the company secretary. Apparently no person came forward to object to the granting of the lease, and on July 21, 1920, San Juan Agency Superintendent Eastop(?) transmitted the application to the Commissioner of Indian Affairs in Washington. Along with the application Eastop(?) included a long letter, which in part expressed his concerns over several matters regarding the corporation. One concern was that according to records, the original locators ceded to the Navajo Mining Company "all the rights, lands, mining claims, and property containing gold, silver, lead, copper, and other precious metals." The superintendent pointed out that the locators could only convey the right to prospect on the reservation. Even had the locators obtained a lease (which they had not) they could not legally convey land, mining claims, or property. His second concern was that a clause be inserted into the lease allowing for 12.5 percent royalty payments. Such a clause he felt would prevent the absorption of royalty payments by excessive salaries to corporation officers. The Department of the Interior approved the lease on October 13, 1920.

Records provided by Chenoweth (1989:Appendix) indicate that rental payments for 80 contiguous acres of land encompassing the four mining claims were paid by the Navajo Mining Company on November 20, 1920, April 21, 1921, May 22, 1922, and May 23, 1923. Rental payments were made a year in advance according to records, so that the lease would have extended until May 1924. Records indicate only one shipment of ore, totaling 1500 pounds, made in April of 1921 and valued at \$68.33. From this, a 12.5 percent royalty, equalling \$8.54, was received. Records thus indicate that total rent and royalty income collected on behalf of the Navajo Tribe between November 1920 and May 1923 was \$109.54.

There is no later archival information relating to the Navajo Mining Company or the leases they held. Moreover, there is no published information concerning Site AZ-1-9-7 other than that found in the reports by Chenoweth (1989) and Anderson and Martin (1991). NAMLRL was unable to locate any living Navajo individuals who had worked at the mine, although the son of a miner named Yazzie was interviewed (Anderson and Martin 1991). From these sources some statements regarding the mine can be made.

It remains uncertain on which claim(s) Site AZ-I-9-7 was eventually established. Available documents do not refer to the mine by any name. It is known that the Navajo, Navajo No. 1, Navajo No. 2, and Navajo No. 4 claims were contiguous,

and thus it is safe to assume that prospecting on or around the area that eventually became the site was undertaken in 1919 by two or more of the individuals who filed claims. That other prospectors were in the vicinity of the Navajo claims during 1919 can be suggested by the fact on November 11, 1919, E. L. Jensen and Joseph Edmonds filed protests against three prospectors for staking claims and erecting monuments on the Navajo Claims 1, 2, and 4, for which they had filed some 10 days earlier (Chenoweth 1989:Appendix). Whether the immediate area was prospected earlier, in conjunction with the late 1800s and early 1900s forays, is unclear.

It is assumed that none of the structural features on Site AZ-I-9-7 were built prior to October 1920, when the lease was granted to the Navajo Mining Company. The fact that an ore shipment was made five months later (in April 1921) suggests that Site AZ-I-9-7 was, by this time, a working mine. As such, at least one of the vertical shafts was probably open and mining of this feature would have required a hoist to remove ore. In addition, since the period between the lease approval and the ore shipment encompassed the winter months of 1920 and 1921, miners would have required adequate shelter. This could have been obtained either by raising the house (Feature 1) immediately or temporarily using the *Béésh ligai Bighan* storage room as living quarters.

Mining at the site appears to have focused on underground workings. There are two vertical shafts at the mine, one of which is associated with the *Béésh ligai Bighan*. Whether both shafts were in operation at the same time is uncertain. Archival sources make no mention of the commodity mined at Site AZ-I-9-7. The original locators attempted to convey rights to be gold, silver, lead, and copper. Thus, they were apparently convinced that precious metals were contained in the ore. The USGS 7.5' series quadrangle map of the area designates the site as a copper mine. Further, Chenoweth (1989:1) speculates that the single recorded ore shipment may have been copper bound for the smelter at Durango, Colorado. The basis for this belief is unclear. The Navajo miner who worked at AZ-I-9-7 believed it to be a silver mine (Anderson and Martin 1991:32). Thus, while it seems certain that unlike other mines in the eastern Carrizos, base metal procurement was the focus of mining activities at AZ-I-9-1, to what extent different precious metals were recovered is unknown. It is, however, interesting to note within this context that two samples recovered by Chenoweth (1989:4) from the site in 1985 were found to contain 13.32 and 89.18 ounces of silver per ton, a much higher proportion of silver than the average (2.95 ounces per ton) found in the 1892 commission's assayed samples.

While it is known that both Anglos and Navajos worked the mine, it is uncertain how many miners worked the mine at one time and where they lived. The Navajo informant whose father worked at AZ-I-9-7 mentioned at least six Anglos working there. Most likely some or all of these men lived at the mine, probably in Feature 1, the house at the site. Whether this structure served as a bunkhouse for Navajo

miners as well is unclear. Mr. Yazzie indicated to his son that mining operations were conducted by hand (Anderson and Martin 1991), and it appears that explosives were not used in the operation. According to Beclabito Chapter officials, the hoists were also hand operated (Perry Charley, NAMLR, personal communication 1992). Mr. Yazzie further indicated that wagons pulled by mules were used to take the ore from the mine (Anderson and Martin 1991). Where the ore might have been stockpiled once it was removed from the site is not known.

The actual dates of operation for the mine can probably only be bracketed by the lease dates, October 1920 to May 1924. Documentation for the 1920 date is fairly firm, based on the lease documentation provided by Chenoweth (1989:Appendix). The single recorded shipment of 1500 pounds of ore does not appear to be consistent with the extent of the workings at the site, although it is possible that most mining encountered only ore of too low a grade to ship. On the other hand, the records may be lacking documentation of other shipments which could verify the existence of a producing mine. Mr. Yazzie worked for two years at the mine (Anderson and Martin 1991) so it is known to have operated at least that long; however, there is no evidence to suggest that his employment coincided with the entire life span of the operation. Assuming that records are complete, the lease was not renewed in 1924.

Within this context, the *Béésh ligai Bighan* is also bracketed by the dates 1920 to 1924. Construction of the hoist room would have been necessary when mining of Feature 7 commenced in order to remove both waste rock and ore from the workings. Storage, the hypothesized function of the larger room of the *Béésh ligai Bighan*, may or may not have been a necessity early in the life of the site.

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THE *BÉÉSH LIGAH BIGHAN* ("Silver Structure", Feature 9, Site AZ-I-9-7)
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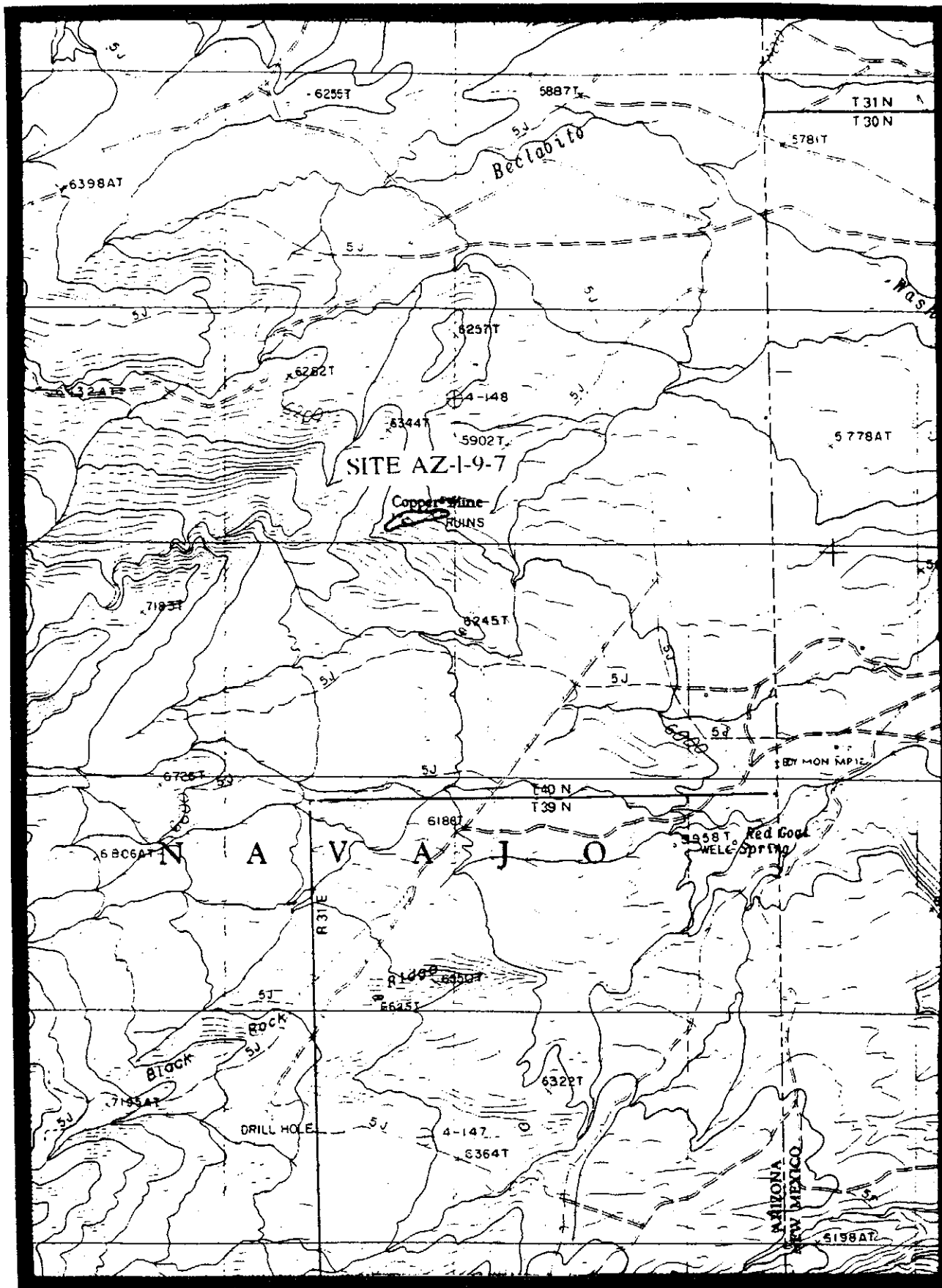


Figure 1. Vicinity map showing the location of Site AZ-1-9-7. Beclabito, N.Mex-Ariz., Provisional Edition 1982, 7.5' series USGS map. T 40N, R 31E (projected).

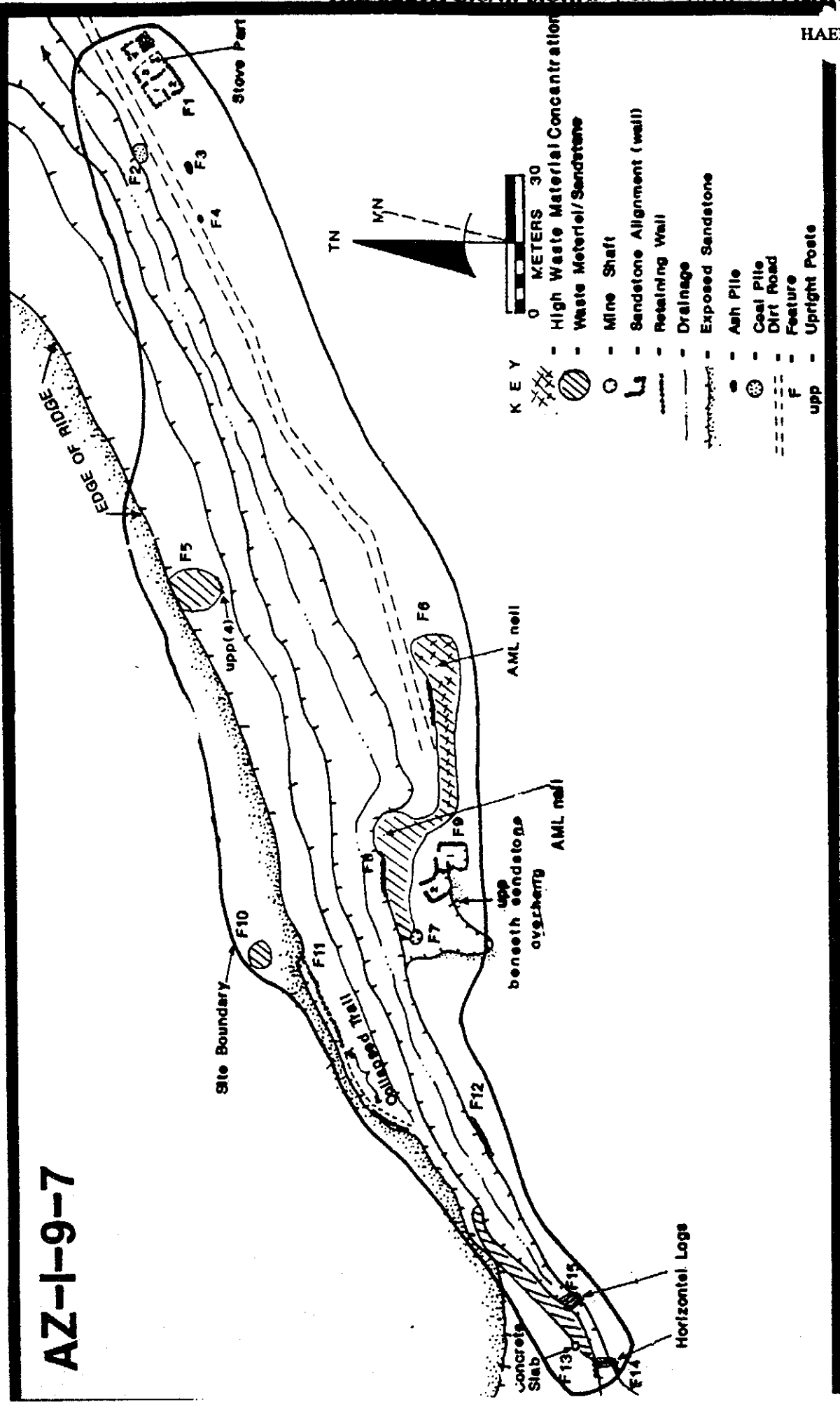


Figure 2. General plan map of Site AZ-1-9-7 (adapted from Anderson and Martin 1991).

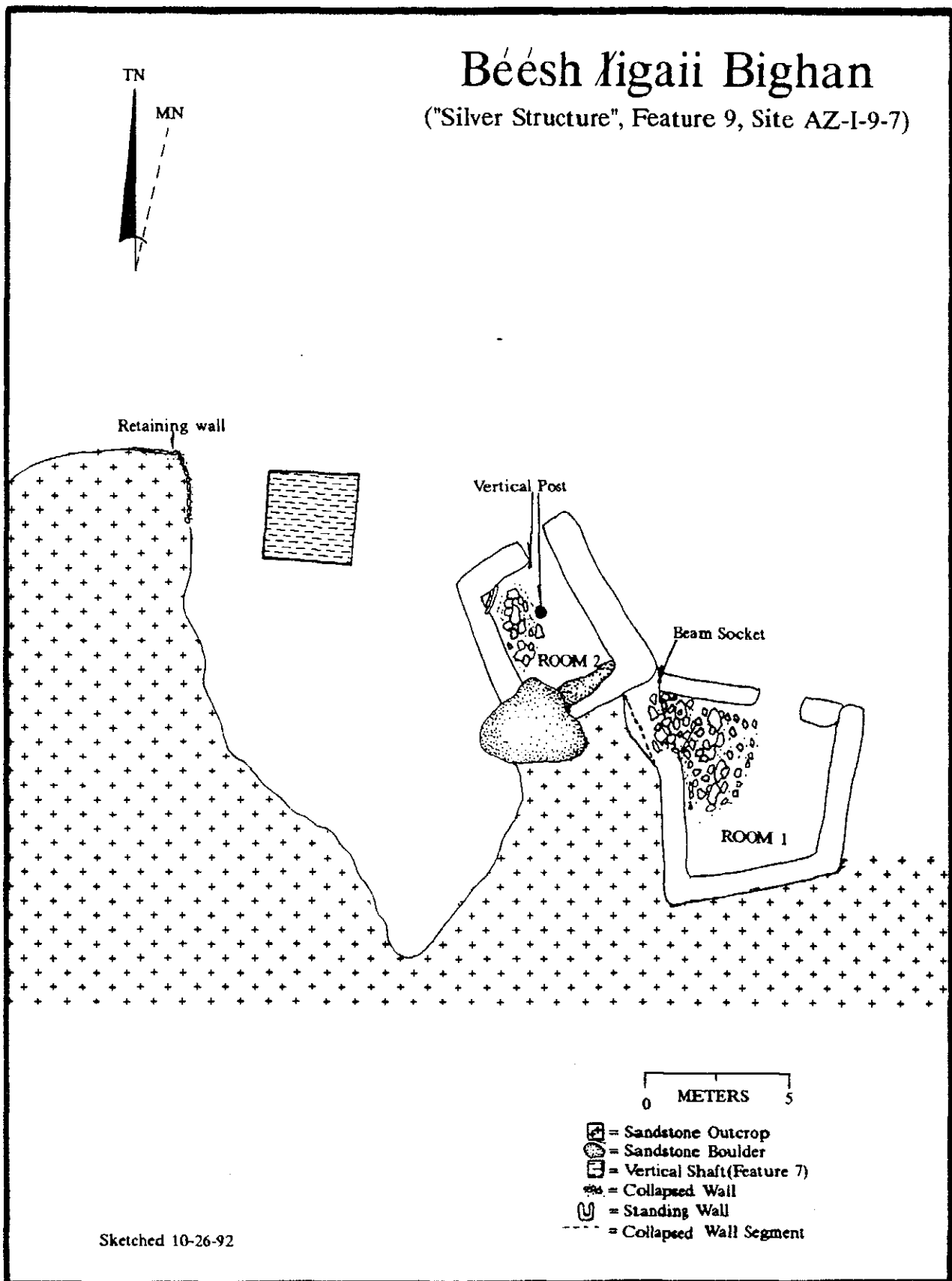


Figure 3. Floor plan sketch of Béesh Ligai Bighan.

SKETCH OF CARRIZO MOUNTAIN "GOLD" MINE

APACHE CO., ARIZONA

SE 1/4 NW 1/4 SEC. 31 T40N R31E (PROJECTED)

WLC VTM

(Modified from Chenoweth 1989)

0 100 Feet

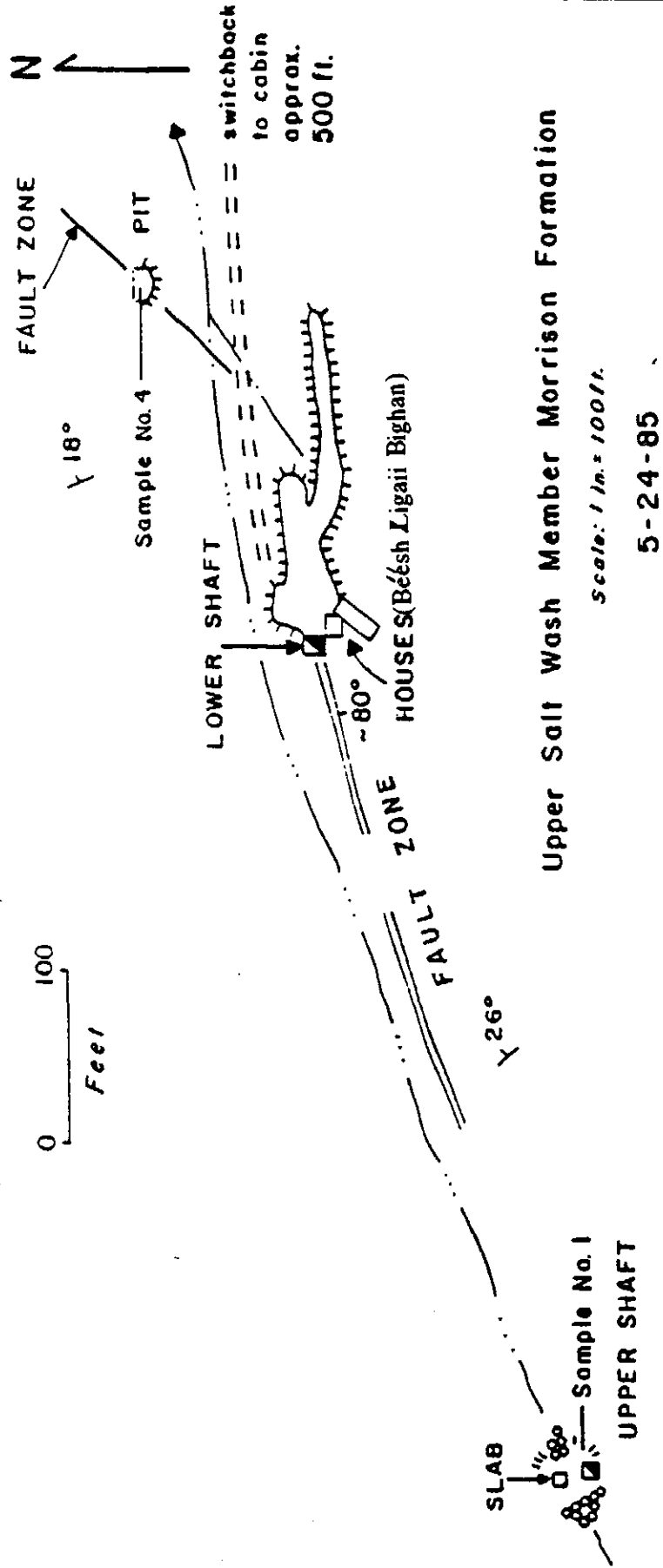


Figure 4. Partial sketch of Site AZ-1-9-7 by Chenoweth (1989).